Heckman two-step selection model was used. The EQ-5D index score was categorized into categories with 0.1 gradations. Marginal effects (ME) were estimated to quantify the marginal changes in costs corresponding to, for instance, 0.1 increments in the EQ-5D index score, or the presence of asthma or asthma treatment. All costs were adjusted to 2003 dollars. **RESULTS:** The EQ-5D index score was a significant predictor of health care costs in all models, as were asthma, asthma treatment and other covariates ($p<0.01$). The Heckman model suggested a significant positive spending bias ($p<0.01$). For the 3 groups considered--non-asthma, asthma and asthma with treatment--the mean EQ-5D index scores were 0.848, 0.755 and 0.706, respectively. The actual mean costs were $2,355, $4,284 and $5,577, respectively. The predicted mean costs using Heckman model were $2,673, $4,431 and $5,618, respectively. On average, a 0.1 unit improvement in EQ-5D score was associated with $502 cost reduction in asthma and $693 cost reduction if asthma patients had treatment ($p<0.01$). However, after adjusting for positive spending bias, the cost reduction was $891 and $961 ($p<0.01$) for these two groups respectively. Greater cost reductions were associated with improving EQ-5D scores at the lower end (<0 to 0.3) and the mid-range (0.5 to 0.7). **CONCLUSIONS:** HRQoL is an important component of health care resource utilization. The findings suggest a significant relationship exists between health care costs and HRQoL data. The EQ-5D significantly predicts costs in asthma and asthma treatment, especially after adjusting non-random positive health care spending.

PRS28

EFFECT OF SMOKING STATUS ON HEALTH CARE COSTS AND RESOURCE UTILIZATION IN PATIENTS WITH CHRONIC-OBSTRUCTIVE-PULMONARY-DISEASE IN CLINICAL PRACTICE: A RETROSPECTIVE NESTED CASE-CONTROL ECONOMIC STUDY

Sicras-Mainar A[1], Rejas J[2], Navarro-Artieda R[3], Ibañez J[4]
[1]*Badalona Serveis Assistencials, Badalona, Spain,* [2]*Pfizer S.L.U., Alcobendas/Madrid, Spain,* [3]*Hospital Universitari Germans Trias i Pujol, Badalona, Barcelona, Spain,* [4]*Badalona Serveis Assistencials, Badalona, Barcelona, Spain*

OBJECTIVES: Chronic-Obstructive-Pulmonary-Disease (COPD) is a prevalent health condition mainly associated with smoking habit, which is considered the reason for higher health care resources utilization and related costs in the National health System. The aim of this study was to analyze and compare health care resource utilization and costs according to smoking status in patients with COPD in clinical practice in Spain. **METHODS:** A retrospective cohort nested case-control study was designed. Cases were current smokers, while two controls (former smokers) per case matched for age, sex, duration of COPD, and burden of comorbidity (number of diagnosis and Charlson index) were included using data from medical records. Non-institutionalized COPD, both genders, 40 years of age and older, seen consecutively over a period of 4 years before the index date and fulfilling eligibility criteria were considered eligible for analysis. Analysis used regression and general linear models with covariates to compare direct and indirect costs and resource utilization. **RESULTS:** A total of 930 COPD medical records were analyzed: 310 corresponding to cases (current smokers) and 630 to controls (former smokers). Mean age was 69.4 years (84.6% male). COPD was more severe in cases; Odds ratio (OR)=1.7 (95% CI 1.1;2.1), and higher percentage of current smokers had exacerbations [OR=2,7 (2.0;3.8)], with 4.2 vs. 1.7 exacerbations per year, respectively, on average ($p<0.001$). Smokers used more physicians visits both at primary care and specialized level, and emergency room as well. Drugs-based therapies were more common in current smokers COPD subjects. As a consequence, smokers had higher average annual health care costs; €3,784 (1,888) vs. €2,302 (2,451) in former smokers ($p<0.001$). **CONCLUSIONS:** COPD smoker patients had more exacerbations and higher severity of disease. Also, used more health care resources, particularly physicians visits and drugs-based therapies resulting in higher health care costs to the national health System.

PRS29

COSTS AND EFFECTIVENESS OF NON-SMOKING CLINIC

Laine J
Pfizer Oy, Helsinki, Finland

OBJECTIVES: In Finland a new Tobacco Act entered into force in October 2010 with the aim of limiting marketing and supply of tobacco products. The long-term objective of the Finnish government is to make Finland tobacco-free by 2040. Several work places and organizations have declared themselves non-smoking. The city of Mikkeli with a population of 55 000, has declared itself a non-smoking city and has established a non-smoking clinic in September 2011. Citizens contacting public health care and willing to quit smoking will be referred to the clinic. **METHODS:** Cross-sectional data was gathered 12 months after the establishment of the clinic. Costs related to investment and clinic's resource utilization were estimated. A health care perspective was applied. **RESULTS:** We studied 74 citizens, who had a least one visit during the first year since the establishment of the clinic. Of them 37% managed to quit smoking. Investment costs related to planning and training of nurses were 168€ per quitter. Operational costs were 141-167€ per quitter. Total costs per quitter were 309-335€. In the future investment costs per customer will decrease as investment costs were nonrecurring. **CONCLUSIONS:** Our results were slightly better than what was achieved in an occupational health care non-smoking project in Finland (37% vs. 31%). In 2010 the average total costs of occupational health care were 340€ per employee in Finland. This is almost the same as the costs per quitter in this study. Cost of cigarettes is about 1800€ per average smoker in Finland. Health care costs related to lung cancer and stroke are about 18500€ per case during the first year. Pharmacological treatment costs about 200-400€ to quitter in average. Investing in smoking clinic is justified from economic and effectiveness point of views. The non-smoking clinic is still in operation.

PRS30

THE LIST OF MEDICINES FOR COPD TREATMENT IN STATE FORMULARY OF UKRAINE AND RELATED COSTS

Tolubaiev V, Zalis'ka O, Kacheray Y
Danylo Halytsky Lviv National Medical University, Lviv, Ukraine

OBJECTIVES: According to the GOLD-2011 report pharmacotherapy in stable COPD is used to reduce the symptoms, frequency and severity of exacerbations, improve health status and exercise tolerance. **METHODS:** Our aim was to assess the list of medicines, which are available in Ukraine for COPD treatment. We compared the medications included in the State Formulary of Ukraine with the dosage forms and typical doses of COPD medications list provided by GOLD-2011. Also we calculated annual course costs for each drug in different dosage forms. The annual course was considered as amount of medicine for 365 days in appropriate for COPD basis dosing. Information about the medicine prices was obtained from the ukrainian electronic pricing database "MORION". The EUR/UAH exchange rate was 1 EUR = 10.53 UAH (20.06.2013) **RESULTS:** The State Formulary of Ukraine (SFU) contains 19 medicines for INN provided by GOLD-2011: 5 INN are in metered dose inhalers (MDI), 5 - in dry powder inhalers (DPI), 1 - in smart mist inhaler (SMI), 5 solutions for nebulizer and 3 - in tablets. Salbutamol, salmeterol, indacaterol, fluticasone, beclomethasone in DPI are not included in the list of SFU, formoterol in MDI and aminophylline, prednisone in tablets are not included in this list as well. The most expensive drug is tiotropium with annual costs 604.46 EUR for SMI and 533.81 EUR for DPI. The annual costs of salmeterol in MDI and formoterol in DPI are 318.55 and 277.30, respectively. The cheapest medicine is salbutamol in MDI with 22.13 EUR annually but annual costs of salbutamol solution for nebulizer amount 464.48 EUR per year per patient. **CONCLUSIONS:** The State Formulary of Ukraine should be reached by medicines for COPD management recommended by GOLD. Annual COPD basis costs are depending not only from kind of medicine but from it dosage forms as well.

PRS31

COMPARING COSTS AND CONSEQUENCES OF TREATING CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITH BUDESONIDE/FORMOTEROL AND FLUTICASONE/SALMETEROL

Roggeri A[1], Pantaleoni M[2], Pasina C[2], Inzillo V[2], Roggeri DP[1]
[1]*ProCure Solutions sas, Nembro (Bergamo), Italy,* [2]*AstraZeneca Italia, Basiglio (MI), Italy*

OBJECTIVES: Inhaled corticosteroids in fixed combination with long-acting B_2-agonists could prevent and reduce chronic obstructive pulmonary disease (COPD) exacerbations. The aim of this analysis is to compare clinical consequences and direct health care costs related to treatment with budesonide/formoterol and fluticasone/salmeterol for COPD considering the Italian National Health Service (INHS) perspective. **METHODS:** Effectiveness data by the PATHOS study, a population-based, retrospective, observational registry study conducted in Sweden, in terms of reduction in COPD hospitalizations and COPD-related emergency departments (ED) visits were considered in order to estimate the differences in resource consumption between patients treated with budesonide/formoterol versus fluticasone/salmeterol. Base case considers the dosages of the 2 drugs from the PATHOS study, the cost of drugs in charge to INHS, COPD hospitalizations costs from Italian real world data and Italian national tariffs for COPD-related ED visits. **RESULTS:** The real world study PATHOS demonstrated a significant reduction in COPD hospitalizations and COPD-related ED visits with budesonide/formoterol versus fluticasone/salmeterol (-29.1% and -21%, respectively); average dosages reported were 568 mcg/day for budesonide/formoterol (as budesonide dosage) and 783 mcg/day for fluticasone/salmeterol (as fluticasone dosage). In the base case, the treatment for 1 year of 100 patients with budesonide/formoterol lead to a saving of 43.892€ (21.859€ for drugs, 21.864€ for COPD hospitalizations and 169€ for COPD-related ED visits) corresponding to -25.2% compared with fluticasone/salmeterol treatment. In the most conservative sensitivity analysis which consider the DDD dosages for the 2 drugs and COPD hospitalizations and COPD-related ED visits costs from national tariffs, the treatment for 1 year of 100 patients with budesonide/formoterol lead to a saving of 15.523€ (5.754€ for drugs, 9.600€ for COPD hospitalizations and 169€ for COPD-related ED visits) corresponding to -12.5% compared with fluticasone/salmeterol treatment. **CONCLUSIONS:** Treatment with budesonide/formoterol compared to fluticasone/salmeterol could lead to a reduction in direct health care costs with relevant improvement in clinical outcomes.

PRS32

UPDATE ON PHARMACOECONOMICS IN NUTRITION: PARENTERAL GLUTAMINE SUPPLEMENT IN INTENSIVE CARE UNIT PATIENTS

Povero M[1], Zaniolo O[1], Muscaritoli M[2], Eandi M[3]
[1]*AdRes HE&OR, Turin, Italy,* [2]*University La Sapienza, Roma, Italy,* [3]*University of Torino, Torino, Italy*

OBJECTIVES: To re-evaluate the economic consequences of parenteral glutamine supplementation (PGS) in light of the recent metaanalysis confirming that PGS at a dose >0,20 g/kg body weight per day in intensive care unit (ICU) patients is associated with reduced mortality, infection rate (IR) and length of stay (LOS). **METHODS:** A simulation model was updated with the new meta-analysis data and clinical inputs for the control group from Italian ICU population reported in "Progetto Margherita". Costs are evaluated from the perspective of the Italian hospital and derive from official sources. Sensitivity analyses are undertaken to test results' reliability **RESULTS:** PGS is predicted to reduce mortality rates (-29.0%), IR (-21.2%) and overall LOS (-1.07 days/patient), yielding a saving of € 1,047 per patient treated. Treatment costs are completely offset by the reduction in hospital stay costs and antibiotic costs. Probabilistic sensitivity analysis indicates PGS strategy as dominant in more than 90% of cases. **CONCLUSIONS:** Also with contemporary comparative efficacy data is PGS in ICU patients expected to be effective in improving outcomes and containing costs in Italian hospitals providing intensive care.

PRS33

COST-EFFECTIVENESS OF GLYCOPYRRONIUM COMPARED TO TIOTROPIUM IN COPD PATIENTS FROM A SWEDISH SOCIETAL PERSPECTIVE

Costa-Scharplatz M[1], Tambour M[1], Henriksson F[1], Ställberg B[2]
[1]*Novartis, Täby, Sweden,* [2]*Uppsala University, Uppsala, Sweden*

OBJECTIVES: To estimate the cost-effectiveness of a novel LAMA, glycopyrronium (Seebri® Breezhaler), compared with tiotropium (Spiriva®) in COPD patients from a Swedish societal perspective. **METHODS:** A probabilistic Markov model was utilized to